



(43) International Publication Date  
8 July 2004 (08.07.2004)

PCT

(10) International Publication Number  
**WO 2004/057865 A3**

(51) International Patent Classification<sup>7</sup>: **H04N 5/76**

(21) International Application Number:  
PCT/IB2003/005900

(22) International Filing Date: 8 December 2003 (08.12.2003)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:  
60/435,493 20 December 2002 (20.12.2002) US

(71) Applicant (for all designated States except US): **KONINKLIJKE PHILIPS ELECTRONICS N.V.** [NL/NL]; Groenewoudseweg 1, NL-5621 BA Eindhoven (NL).

(71) Applicant (for AE only): **U.S. PHILIPS CORPORATION** [US/US]; 1251 Avenue of the Americas, New York, NY 10510-8001 (US).

(72) Inventors; and

(75) Inventors/Applicants (for US only): **JOCHEMSEN, Robert** [NL/NL]; P.O. Box 220, NL-5600 AE Eindhoven

(NL). **DENISSEN, Adrianus, J.** [NL/NL]; P.O. Box 220, NL-5600 AE Eindhoven (NL).

(74) Common Representative: **KONINKLIJKE PHILIPS ELECTRONICS N.V.**; c/o LUNDIN, Thomas, M., 595 Miner Road, Cleveland, OH 44143 (US).

(81) Designated States (national): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW.

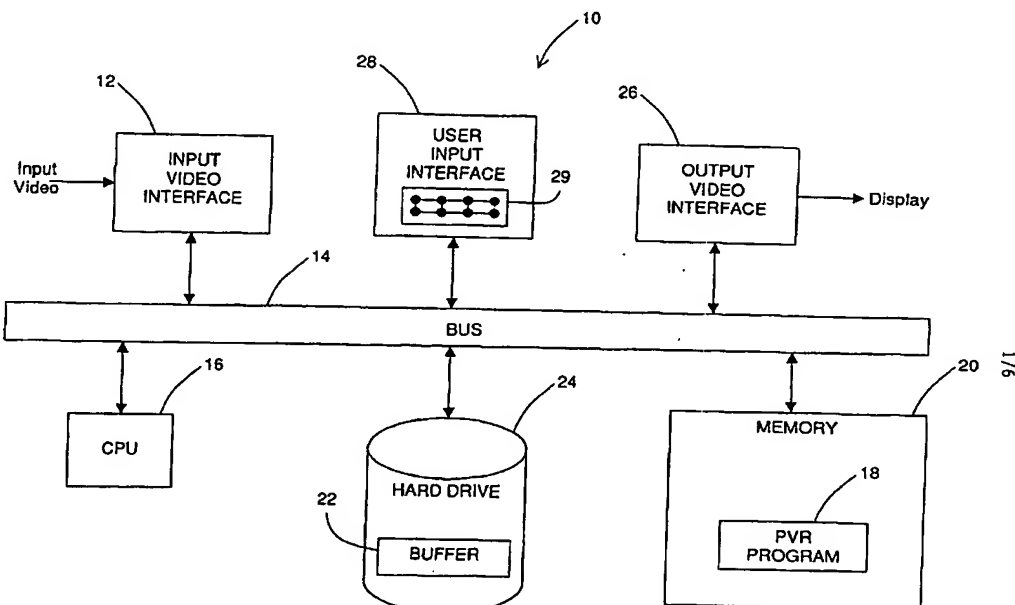
(84) Designated States (regional): ARIPO patent (BW, GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO, SE, SI, SK, TR), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

Published:

— with international search report

[Continued on next page]

(54) Title: MORE USER FRIENDLY TIME-SHIFT BUFFER



(57) Abstract: A PVR device (10) having a varying size time-shift buffer (22) that provides a guaranteed minimum replay time for a more consistent consumer experience. The PVR device includes a video data storage means (24), a video input means (12), a video output means (32), a user input means (28), an input module (30) for receiving the video input data and writing the video input in the time-shift buffer (22), an output module (32) for reading the written video data from the time-shift buffer (22) and displaying it via the video output means (32) and a trimming module (42) for reducing the size of the time-shift buffer (22).



— *before the expiration of the time limit for amending the claims and to be republished in the event of receipt of amendments*

*For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.*

(88) **Date of publication of the international search report:**  
3 February 2005

## INTERNATIONAL SEARCH REPORT

BEST AVAILABLE COPY

PCT/IB 03/05900

A. CLASSIFICATION OF SUBJECT MATTER  
IPC 7 H04N5/76

According to International Patent Classification (IPC) or to both national classification and IPC

## B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)  
IPC 7 H04N

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

EPO-Internal

## C. DOCUMENTS CONSIDERED TO BE RELEVANT

| Category *   | Citation of document, with indication, where appropriate, of the relevant passages             | Relevant to claim No.                                  |
|--------------|--|--|
| A            | EP 1 185 095 A (BURST.COM, INC.)<br>6 March 2002 (2002-03-06)                                  | 1, 3, 6, 9,<br>10, 12,<br>17-19,<br>21-24, 28          |
| Y            | paragraph '0024! - paragraph '0027!<br>paragraph '0033! - paragraph '0034!;<br>figures 1, 2, 4 | 11, 20, 27   |
| P, X         | US 2003/210891 A1 (BURDA)<br>13 November 2003 (2003-11-13)                                     | 1-4, 9,<br>10,<br>12-15,<br>17-19,<br>21-25,<br>28, 29 |
| P, Y<br>P, A | the whole document   | 11, 20, 27<br>6, 8                                     |

☐ Further documents are listed in the continuation of box C.☒ Patent family members are listed in annex.

## \* Special categories of cited documents:

\*A\* document defining the general state of the art which is not considered to be of particular relevance

\*E\* earlier document but published on or after the International filing date

\*L\* document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)

\*O\* document referring to an oral disclosure, use, exhibition or other means

\*P\* document published prior to the International filing date but later than the priority date claimed

\*T\* later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention

\*X\* document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone

\*Y\* document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art.

\*&amp;\* document member of the same patent family

Date of the actual completion of the international search

9 December 2004

Date of mailing of the international search report

21/12/2004

Name and mailing address of the ISA

European Patent Office, P.B. 5818 Patentlaan 2  
NL - 2280 HV Rijswijk  
Tel. (+31-70) 340-2040, Tx. 31 651 epo nl,  
Fax: (+31-70) 340-3016

Authorized officer

Verleye, J

## INTERNATIONAL SEARCH REPORT

BEST AVAILABLE COPY

PCT/IB 03/05900

| Patent document<br>cited in search report |    | Publication<br>date | Patent family<br>member(s) |            | Publication<br>date |
|---|----|---------------------|----------------------------|------------|---------------------|
| EP 1185095                                | A  | 06-03-2002          | EP                         | 1185095 A1 | 06-03-2002          |
| US 2003210891                             | A1 | 13-11-2003          | NONE                       |            |                     |